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To: Brad Jackson/R4/USEPA/US@EPA
cc: "Suzanne Z (szoda@comcast.net)" <szoda@comcast.net>, "Bob Sullivan (sullivan@anl.gov)" <sullivan@anl.gov>
Subject: First draft web page text

<<Rev 1 Website writeups for FL Radiation Assessment 7-06-04.doc>>
Hi Brad,

Welcome back; I hope you had a great vacation!

Attached for your review and comment is a file providing the draft text for the home page (1.0) and first section (1.1 through 1.4) of the web site. As you will notice, Suzanne and I would like to change the titles of the main headings for the web page, not only to make them consistent grammatically, but also to make them sound more positive. We welcome discussing our suggestions with you and the Argonne team.

As for a possible meeting at EPA the week of July 12:
I will be out of the office on Monday (July 12), Suzanne will be out of pocket on Tuesday (July 13), but we are available on Wednesday (July 14--1st choice) or Thursday (July 15--2nd choice). I hope one of these days may work for you.

Best wishes, Mary

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Rev 1 Website writeups for FL Radiation Assessment 7-06-04.doc

Central Florida Radiation Assessment
Public Information Center

[1.0 - INTRO VERBIAGE FOR HOME PAGE]

The U.S. Environmental Protection Agency (EPA) is evaluating portions of central Florida where phosphate mining once occurred to determine whether these areas have higher than average levels of radiation. Radiation is a form of energy that can occur naturally in the environment; for example, the sun's rays contain radiation.

Minerals in phosphate ore give off naturally occurring radiation. As the ore is mined and processed, these minerals can move, become concentrated in the soil, and could release excess radiation into the environment.

The EPA has learned that in areas of central Florida, where phosphate mining occurred many years ago, radiation levels may be higher than the average (or background) levels for non-mined areas in the region. As a result, the EPA is assessing radiation levels on formerly mined land in central Florida. The Agency's first step is to conduct a pilot radiation assessment (insert link to pilot radiation assessment), which focuses on locations in central Florida where people live on land mined for phosphate ore before 1975.

This web site provides information about the EPA's Central Florida Radiation Assessment. Explore the site to learn more about . . .

- **The Issue:** Radiation levels in central Florida related to phosphate mining
- **Assessment Areas:** Formerly mined areas in parts of Central Florida
- **Potential Effects:** Human health, environmental, and other potential effects
- **EPA Activities:** Radiation assessment and other information gathering activities
- **Community Options:** Follow-up steps for residents and sources for more information

[1.1]

The Issue

Over the past 3 years, the EPA has been collecting information on areas of central Florida where phosphate mining occurred before 1975. Review and analysis of this information suggest that radiation levels in these areas could be higher than the average (background) levels for central Florida.

The EPA needs more information to determine whether radiation is present at levels that could cause long-term, chronic health effects. As a first step, the EPA is doing a pilot radiation assessment to identify radiation levels over land mined before 1975 that includes residential developments. Assessment results will be used to determine areas that may need additional study.

The following links explain the radiation issue, the connection between phosphate mining and residential development, potential areas of concern in central Florida, and the Agency's interest in assessing these areas to determine potential radiation exposure levels.

[1.1.1]

Potential Presence of Radioactive Substances
(new title suggestion: **Radiation and Phosphate Mining**)

Radiation, a form of energy found in our environment, comes from many natural substances, including the sun and various types of rock. Radiation can also be found in man-made sources, such as medical imaging equipment.

Phosphate ore is found in many areas of central Florida. The ore may contain minerals, such as uranium, thorium, or radium, which give off low levels of radiation.

When phosphate ore is processed, minerals in the ore containing radiation can become concentrated. As a result, ore leftover after mining and processing (tailings) may give off more radiation than ore in areas where mining did not occur.

The EPA's pilot radiation assessment focuses on detecting radium-226, a naturally occurring form of radiation in phosphate ore. The EPA is assessing radium-226 because it gives off gamma radiation *(insert link to explain gamma radiation)* and radon gas *(insert link to explain radon gas)*, both of which can cause human health and environmental effects

[1.1.2]

Phosphate Mining and Subsequent Development
(New title suggestion: **Development of Mined Areas**)

Phosphate mining began in Florida in the late 1800s. Today, many manufactured products, including fertilizers, contain phosphate, and the phosphate industry is a major part of Florida's economy.

Phosphate ore was mined in Polk County and later in parts of Hillsborough, Hardee, DeSoto, Manatee, and Sarasota counties. Although mining has stopped in Polk County, it continues in areas to the south.

In 1975, the State of Florida passed a law requiring phosphate companies to reclaim mined land to make the land safe and suitable for other purposes. Before 1975, however, companies reclaimed mined lands only on a voluntary basis. As a result, some mined lands either may not have been reclaimed or may not have been reclaimed properly.

The EPA expects that if mined land was reclaimed properly, then radiation levels will be no higher than average or background levels for central Florida. If, however, mined areas were not reclaimed properly, then radiation levels in these areas could be above average (background) levels for central Florida.

Since the mid-1970s, central Florida has experienced substantial growth and development. Some areas of Polk County have residential and commercial developments built on former phosphate mines. Developers may have taken precautions, such as requiring thick concrete pads under houses, to protect residents from potential radiation exposure. If precautions were not taken or the mined lands were not reclaimed properly before development, then the potential exists for higher than average (background) radiation levels in these areas of central Florida.

[1.1.3]

Extent of Potential Problem
(New title suggestion: **Potentially Elevated Radiation Levels**)

The EPA has reviewed previous radiation tests and studies of similar mining sites closed before 1975. This information suggests that increased levels of radiation may be present in some formerly mined areas. While the levels may be higher than background, the Agency has no evidence that radiation is at levels requiring immediate action.

Some central Florida residents may be living in homes or working in buildings constructed on former phosphate mines or production areas. If the land beneath these homes or other structures contains elevated levels of radiation, the potential exists for radon gas to seep into the building. Exposure to low levels of radiation, in the form of radon gas, over a long period of time can result in chronic health problems.

also direct exposure

The EPA has no evidence of acute health issues or immediate problems related to radiation in central Florida. People living or working in areas where phosphate mines once operated are NOT necessarily being exposed to elevated radiation levels. The potential for exposure, however, exists. Therefore, the Agency will do an initial assessment to measure radiation levels in portions of Polk and Hillsborough counties and to map the areas where the levels are higher than background.

[1.1.4]

Area of Potential Concern

The EPA identified a large portion of Polk County and a small area in Hillsborough County for the pilot radiation assessment. [link to 1.4.2 – Pilot Radiation Assessment] The assessment areas include lands that were formerly mined for phosphate. Some, but not all, of these lands have been redeveloped.

The **map** (link to graphic) shows the areas of potential concern. Approximately 70,000 acres in Polk County and 2,000 acres in Hillsborough County are included in the radiation assessment area.

The EPA emphasizes that many of the areas shown on the map were not mined and may be unaffected. The assessment area includes both formerly mined and non-mined lands because radiation measurements will be taken by a specially-equipped helicopter flying back and forth over the land. and to aid in the ~~development~~ comparison of levels on mined to non-mined land.

Information from the pilot radiation assessment will indicate any areas with increased radiation. The assessment will also provide information from the non-mined areas that may be useful for comparison to background levels.